

-continued

Ingredients	% by weight	lbs/T
Methionine Hyd. Anal.	0.15	3.00
Lysine HCl	0.29	5.80
	100.00	2000.00

<sup>1</sup>Vitamin premix provides 3000 IU of Vitamin A, 900 ICU of vitamin D<sub>3</sub>, 40 mg. of Vitamin E, 0.7 mg. of vitamin K, 1000 mg of choline, 70 mg. of niacin, 4 mg of pantothenic acid, 4 mg of riboflavin, 100 mcg of vitamin B<sub>12</sub>, 100 mcg of biotin and 125 mg of ethoxyquin per kg of complete feed.

<sup>2</sup>Trace mineral premix provides 75 mg of manganese, 50 mg of zinc, 25 mg of iron and 1 mg of iodine per kg of complete feed.

Test animals received with the above ration varying doses of 1-(4-hydroxyphenyl)-2-[1-methyl-3-(4-hydroxyphenyl)propylamino]ethanol hydrochloride (compound A). Each treatment was replicated sixteen times, and the test was terminated when the animals reached fifty-six days of age. The animals were analyzed for weight gain and feed efficiency. The results of this test in broilers is presented in Table VII as mean weight gain and mean feed to gain ratios.

TABLE VII

Growth Performance of Broilers					
Treatment	Dose (g/T)	Weight Gain		Feed Efficiency	
		grams	% improve- ment	Feed/Gain Ratio	% change from control
Control		1473	0	2.336	0
Compound A	10	1585	7.6	2.292	1.9
Compound A	20	1613	9.5	2.298	1.6
Compound A	40	1550	5.2	2.312	1.0
Compound A	80	1669	13.3	2.221	4.9

The results of this study demonstrate that the  $\beta$ -phenethanolamines described herein are effective in promoting growth and improving feed efficiency in poultry.

The compounds of the invention also have demonstrated efficacy in ruminants. Forty-eight cross-bred wether lambs were employed in a test designed to show the effects of Compound A (1-(4-hydroxyphenyl)-2-[1-methyl-3-(4-hydroxyphenyl)propylamino]ethanol hydrochloride) at varying doses. Sixteen animals were held as controls, while sixteen received 40 ppm of Compound A, and another sixteen received 80 ppm of Compound A. All animals received a normal daily feed ration and water ad libitum. Average daily weight gain and average daily feed consumption after twenty-eight days is given below in Table VIII. The data demonstrates that a  $\beta$ -phenethanolamine as defined herein is effective in promoting growth and improving feed efficiency in ruminants.

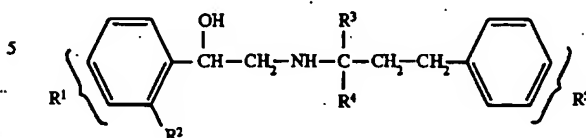
TABLE VIII

Treatment	Growth Performance of Lambs			
	Dose (ppm)	ADG (lbs)	ADF (lbs)	F/G
Control	0	0.414	3.68	8.89
Compound A	40	0.418	3.61	8.64
Compound A	80	0.472	3.57	7.56

We claim:

1. A method for treating a domesticated warm blooded animal to promote growth, improve feed efficiency, or

improve leanness, which comprises administering to the animal both of (1) a first compound having the formula



wherein:

R<sup>1</sup> is hydrogen, hydroxy, or methoxy;

R<sup>2</sup> is hydrogen or fluoro;

R<sup>3</sup> is hydrogen or C<sub>1</sub>-C<sub>2</sub> alkyl;

R<sup>4</sup> is hydrogen or methyl;

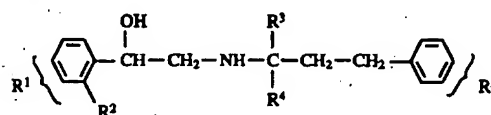
R<sup>5</sup> is hydrogen, fluoro, nitro, hydroxy, SO<sub>2</sub>CH<sub>3</sub>, or CONH<sub>2</sub>; provided that R<sup>1</sup> is hydrogen only when R<sup>5</sup> is nitro or SO<sub>2</sub>CH<sub>3</sub>, or an acid addition salt thereof; and (2) a second compound which is a tetracycline, tylosin, penicillin, cephalosporin, polyether, glycopeptide, or orthosomycin, in amounts which in combination are effective.

2. The method of claim 1 wherein the first compound is 1-(4-hydroxyphenyl)-2-(1-methyl-3-(4-hydroxyphenyl)propylamino)ethanol or an acid addition salt thereof.

3. The method of claim 2 wherein the second compound is tylosin.

4. The method of claim 2 wherein the second compound is a polyether.

5. A composition useful for treating a domesticated warm blooded animal to promote growth, improve feed efficiency, or improve leanness, which comprises both of (1) a first compound having the formula



wherein:

R<sup>1</sup> is hydrogen, hydroxy, or methoxy;

R<sup>2</sup> is hydrogen or fluoro;

R<sup>3</sup> is hydrogen or C<sub>1</sub>-C<sub>2</sub> alkyl;

R<sup>4</sup> is hydrogen or methyl;

R<sup>5</sup> is hydrogen, fluoro, nitro, hydroxy, SO<sub>2</sub>CH<sub>3</sub>, or CONH<sub>2</sub>; provided that R<sup>1</sup> is hydrogen only when R<sup>5</sup> is nitro or SO<sub>2</sub>CH<sub>3</sub>, or an acid addition salt thereof; and (2) a second compound which is a tetracycline, tylosin, penicillin, cephalosporin, polyether, glycopeptide, or orthosomycin, in a ratio of about 1 to about 2 parts by weight of the first compound and about 1 to about 10 parts by weight of the second compound.

6. The composition of claim 5 wherein the first compound is 1-(4-hydroxyphenyl)-2-(1-methyl-3-(4-hydroxyphenyl)propylamino)ethanol or an acid addition salt thereof.

7. The composition of claim 6 where the second compound is tylosin.

8. The composition of claim 6 wherein the second compound is a polyether.

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